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Policies Specific to Patients with Anti-U - Blood Bank

Document Type: Procedure

I. PURPOSE AND OBJECTIVE:

This document will provide policies used to provide RBCs and document patient and unit antigen typing results for patients with Anti-U.

II. PRINCIPLE:

Patients who develop Anti-U are usually African American and the patient's own RBCs type as S-s-. The plasma may appear to be pan-reactive but will likely be non-reactive with S-s- test RBCs. Assistance from a reference laboratory is typically required to rule out other clinically significant antibodies and to confirm the presence of Anti-U. Molecular genotyping will be performed to determine whether the patient's RBCs are U negative or U variant. In some cases, molecular testing of the donor unit may be required, as described throughout this document. Patients may develop Anti-U if their own RBCs are U negative, or if their RBCs are U variant (similar to the development of Anti-D in a patient with partial Rh(D) RBCs).

III. POLICIES:

A. **Molecular Genotyping of Patient RBC's Required**
Molecular genotyping of the patient RBC's should be performed on all patients with Anti-U or suspected Anti-U. This testing may be performed by the Versiti Wisconsin. The patient's sample should be submitted to the Versiti Michigan via Versiti Reference Lab or the send outs department. A report will be emailed or faxed directly to the Blood Bank.

B. **Documentation of Patient Molecular Testing / Transfusion**
As described above, the RBCs of patients with Anti-U must be tested by molecular methods by a reference laboratory.

1. If the patient's RBCs are U negative by molecular testing:
    a. The Anti-U antibody will be added to the patient's computer record.

b. The UNM (U negative molecular) special message will be added under Patient / Edit / Messages.

c. RBCs transfused to the patient must be U negative, as determined by molecular methods by a reference laboratory.

2. If the patient's RBCs are U variant by molecular testing:

   a. The Anti-UVAR antibody will be added to the patient's computer record.

   b. The UVM (U variant molecular) special message will be added under Patient / Edit / Messages.

   c. RBCs transfused to the patient may be S-s-. RBCs that are S-s- should be documented in the computer as UVAR negative (for additional information refer to the following policy Documentation of Unit Antigen Results / units that are U variant.) In addition, RBCs transfused to patients with Anti-UVAR may be U negative by molecular testing.

3. If U molecular testing of the patient's RBCs is incomplete for any reason:

   a. The Anti-U antibody will be added to the patient's computer record.

   b. RBCs transfused to the patient must be U negative, as determined by molecular methods by a reference laboratory.

   c. If the patient's RBCs are later determined to be U variant by molecular methods, then the Anti-U antibody will be deleted, the Anti-UVAR antibody will be added, and RBCs should be transfused as described above (see If the patient's RBCs are U variant by molecular testing).

C. **Documentation of Unit Antigen Results**

1. When units that are U negative by molecular methods are received into inventory, the U negative antigen type will be added as described in the Blood Bank CDM - Add / Delete / Edit / Display Unit Antigens. The Blood Bank must receive documentation from the reference laboratory that the unit was U negative by molecular methods. For example, this information should appear on the label provided by the reference laboratory; if it does not the Blood Bank should request this information to be faxed and may then handwrite this information on the unit antigen label.

2. When units that are U variant are received into inventory, the UVAR negative antigen type will be added as described in the Blood Bank CDM - Add/ Delete/ Edit/ Display Unit Antigens. It may seem counterintuitive to document units as UVAR negative when the reference laboratory finds them to be U variant, but it is very important to document these units as UVAR negative, in order for the computer logic to work correctly. The complete description for this antigen in the computer is **Uvar ag (Ss Neg**). The documentation of a unit as UVAR negative means that:

   a. The unit is S-s- (as determined by antigen typing or a reference laboratory), or

   b. The unit is U negative with unlicensed antisera, or

   c. The unit is U variant by molecular methods. Under no circumstances should units be documented in the computer as UVAR positive. If a unit is incorrectly documented as UVAR positive, computer warnings will be generated when selecting and issuing the unit.

3. The unit should be labeled to correspond to the computer documentation. For example:
    a. If the computer indicates that the unit is U negative, the unit should be physically labeled as U negative.
    b. If the computer indicates that the unit is U variant negative, the unit should be physically labeled as U variant negative.

D. **Appropriate Titer Cell**
The appropriate cell to complete an Anti-U titer is S+ s+.

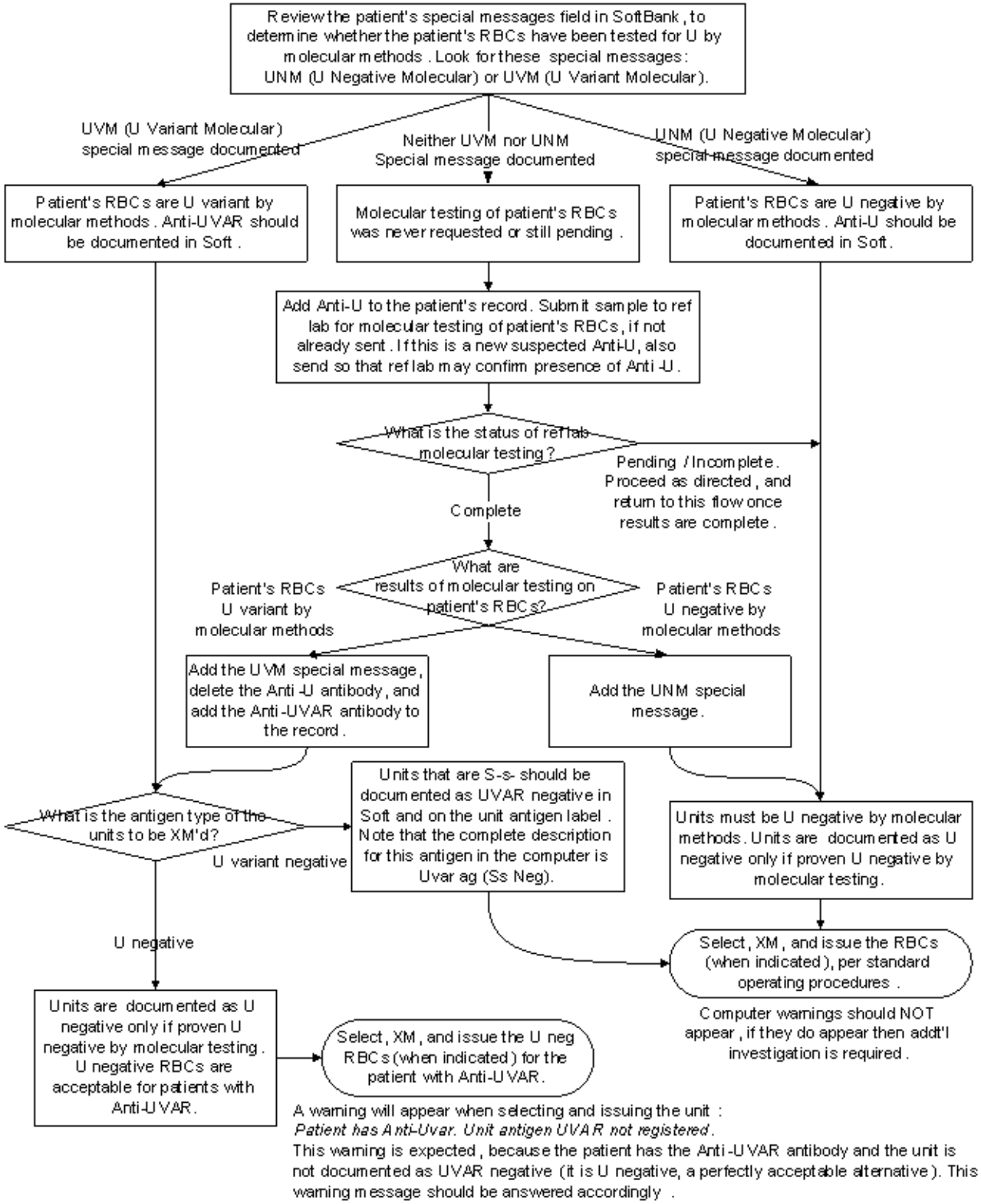
E. **"U Negative" Units Received from Blood Suppliers**
Blood suppliers may have varying policies for providing RBCs for patients with Anti-U and for labeling units on which U testing has been performed. Therefore, the Blood Bank must request documentation from the supplier, indicating the method by which the U antigen status was determined. The Blood Bank must then document the antigen type in the computer based on this information. Blood suppliers may test for U by one of several methods. Examples follow:

Method by which Blood Provider Determined U Status of RBC Unit		**Document Unit Antigen in Blood Bank Computer as follows:**
Anti-U reagent		UVAR negative
Molecular U testing	U negative by molecular	U negative
	U variant by molecular	UVAR negative
S-s- unit based on serologic testing		UVAR negative

F. **Summary of Policies Specific to Patients with Anti-U**

Patient's U Antigen Status (Special Message)	**Patient Antibody**	**Acceptable RBCs for Transfusion**
UNM patient's RBCs are U negative by molecular methods	Anti-U	Unit documented in Soft as U negative Unit has been proven to be U negative by molecular methods
UVM patient's RBCs are U variant by molecular methods	Anti-UVAR	• Unit documented in Soft as UVAR negative means that the unit is S-s-, or U negative with unlicensed antisera, or that the unit has been found to be U variant by molecular methods, or • Alternative: Unit documented in Soft as U negative (means that the unit has been proven to be U negative by molecular methods). A computer warning will be generated
No special message - Patient RBCs not yet tested for U by molecular methods	Anti-U	Unit documented in Soft as U negative Unit has been proven to be U negative by molecular methods

IV. PROCEDURE:



V.
NOTES:

A. As described in this document, it is acceptable to transfuse a U negative unit to a patient with the Anti-UVAR antibody. Note, however, that a computer warning will be generated when the unit is selected and issued. This warning is expected, because the patient has the Anti-UVAR antibody and the unit is not documented as UVAR negative (it is U negative, a perfectly acceptable alternative). This warning message should be answered accordingly.

B. Note that due to the expense, once a blood supplier tests a donor by molecular methods it is unlikely that subsequent donations would be tested by molecular methods. Therefore, there are no "preliminary" unit antigen codes for U or UVAR in Soft. For example:

    1. The donor's first unit is found to be U negative by molecular methods and is documented in Soft as U negative. A few years later, a second donation is made and the blood supplier labels the unit as "U negative." The Blood Bank should request documentation from the blood supplier, indicating that the U molecular testing was performed on a historical donation. The unit should be documented in Soft as U negative (there is no preliminary code P/U negative in Soft).

Approval Signatures

Step Description	Approver	Date
	Jeremy Powers: Chief, Pathology	6/7/2022
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